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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,188	10/12/2004	Yoshishige Yoshikawa	2004-1155A	5501
513	7590	10/02/2006	EXAMINER	
WENDEROTH, LIND & PONACK, L.L.P.			THAI, LUAN C	
2033 K STREET N. W.			ART UNIT	
SUITE 800			PAPER NUMBER	
WASHINGTON, DC 20006-1021			2891	

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/502,188	<b>Applicant(s)</b> YOSHIKAWA, YOSHISHIGE	
	<b>Examiner</b> Luan Thai	<b>Art Unit</b> 2891	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-26 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/22/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

2. The Information disclosure Statement filed on 7/22/04 has been considered.

### *Claim Objections*

3. Claim 22 is objected to because of the following informalities:  
  
In claim 1, line 3, "a electromagnetic wave" should be changed to --an electromagnetic wave--.  
  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.  
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 19, 21, 23-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al (5,702,775).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claim 19, Anderson et al (see specifically figures 1-3, Col. 1, line 65 to Col. 6, line 40) disclose a manufacturing process of a packaged component, comprising: (a) preparing an element (e.g., a SAW die 10), (b) depositing a volume-changing member (16) on at least a partial surface of said prepared element (10), (c) sealing said element and said volume-changing member with a sealing material (20), (d) shrinking said volume-changing member sealed with said sealing material to release said volume-changing member from the partial surface of said element opposing thereto, thereby to define a space (18) there between.

Regarding claim 21, Anderson et al. further teach the step (c) being made while said volume-changing member (16) is heated for expansion, and wherein the step (d) is made by cooling to shrink said volume-changing member heated in the step (c) (Col. 4, lines 40+).

Regarding claim 23, Anderson et al. further teach applying a releasing agent between said volume-changing member and the partial surface of said element opposing thereto, applying said volume-changing member on said releasing agent (Col. 2, line 66 to Col. 3, line 19), and applying an adhesive between said volume-changing member and said sealing material opposing thereto (Col. 2, lines 61+ and Col. 8, lines 26+).

Regarding claim 24, Anderson et al. disclose manufacturing process of a packaged component, comprising: (a) preparing an element (e.g., the die 10), (b) forming a cover layer (e.g., the acoustic wave transducers formed on the surface of the die 10, Col. 2, lines 15+) on a surface of said first element (10), (c) depositing a volume-changing member (16) on the cover (e.g., the acoustic wave transducers), (d) sealing said element, the cover, and said volume-

Art Unit: 2891

changing member with a sealing material (20), (e) shrinking said volume-changing member with the sealing material (20) to release the volume-changing member (16) from the partial surface of said element opposing thereto, thereby to define a space (18) there between.

Regarding claim 26, Anderson et al. disclose manufacturing process of a packaged component, comprising: (a) preparing a first element (e.g., the die 10), (b) providing a second element (e.g., the acoustic wave transducers, Col. 2, lines 15+) on a surface of said first element (10), (c) depositing a volume-changing member (16) on said second element, (d) sealing said first and second elements and said volume-changing member with a sealing material (20), and (e) shrinking said volume-changing member to release said second element from said first element (e.g., creating an opening 18).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 20, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al (5,702,775).

The figures and reference numbers referred to in this office action are used merely to indicate an example of a specific teaching and are not to be taken as limiting.

Regarding claim 25, Anderson et al. (Fig. 3) disclose manufacturing process of a packaged component, comprising: (a) preparing a semiconductor integrated circuit chip (e.g., the amplifier 94 or the mixer 96) and a piezoelectric material chip (e.g., the SAW filter 99 as

described above, see Col. 2, lines 22+); (b) arranging said semiconductor integrated circuit chip and said piezoelectric material chip at predetermined positions, (c) electrically connecting said semiconductor integrated circuit chip (94/96) and said piezoelectric material chip (99) to external connection terminals (e.g., the output 100, (d) depositing a volume-changing member on at least a partial surface of said piezoelectric material chip; (e) sealing said piezoelectric material chip with a sealing material, and (f) shrinking said volume-changing member sealed with said sealing material to define a space (18) between said volume-changing member and the partial surface of said piezoelectric material chip. Anderson et al. do not teach sealing the semiconductor integrated circuit chip.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Anderson et al.'s package component by applying a sealing coat over the semiconductor integrated circuit chip for the purpose of protective the chip from harmful environmental conditions and such modification is held to be within the ordinary designing ability expected of a person skilled in the art.

Regarding claims 20 and 22, Anderson et al. the limitations of the claimed invention as detailed above except for the volume-changing member being made of material that shrinks when heated or when exposed to an electromagnetic wave.

Anderson et al. do teach that the volume-changing member (16) (shrinking at certain temperature) can be selected from a material that has a TCE (Thermal Coefficient of Expansion) from about greater than 30 to about 150 or more (Col. 4, lines 34+). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select a material (having a certain TCE) on the basis of its suitability for the intended use (shrinking when

Art Unit: 2891

heated). The selection of the material (shrinking when exposed to an electromagnetic wave ) for forming the volume-changing member, in claim 22, would have also been obvious for similar reasons set forth above.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is 571-272-1935. The examiner can normally be reached on 8:00 AM - 4:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bradley W. Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Luan Thai**

Primary Examiner

Art Unit 2891

September 25, 2006